

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A method for preparing managanese-based nitride the method comprising:

placing a mixture of  $Mn_2N$  and Cu in a quartz tube;

evacuating the tube;

sealing the tube; and

sintering the mixture at a temperature of from ~~about~~ 800°C to ~~about~~ 900°C to generate a manganese-based nitride having a cubic antiperovskite structure.

2. (Previously Amended) The method of claim 1, wherein  $Mn_2N$  is included in the mixture in a molar ratio of 1.45-1.55 per mole of copper.

3. (Previously Amended) The method of claim 1, further comprising:  
heating the mixture at a rate of 40-50°C/h after sealing the tube.

4. (Previously Amended) The method of claim 1, wherein said mixture is wrapped with tantalum foil before being placed into the quartz tube.

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5. (Previously Amended) A manganese-based nitride of the formula  $\text{CuNMn}_3$  and having a temperature coefficient of resistivity of 40-50 ppm/K and a cubic antiperovskite structure.

6. (Previously submitted) The method of claim 1, wherein the manganese-based nitride has the formula  $\text{CuNMn}_3$ .

7. (Previously submitted) The method of claim 1, wherein sintering the mixture is performed for a time of between 40 hours and 60 hours.

8. (Currently Amended) A manganese-based nitride material comprising:  
copper, nitrogen, and manganese according to the formula,  $\text{CuNMn}_3$ ;  
wherein the material has a cubic antiperovskite structure; and  
wherein the material has a temperature coefficient of resistivity of between about 40 ppm/K and 50 ppm/K over a temperature range of about 160 K to about 350 K.

9. (Previously submitted) The manganese-based nitride material of claim 8, wherein the cubic antiperovskite structure of the material has a space group  $Pm\bar{3}m$  and a lattice parameter of  $a=3.90465(9) \text{ \AA}$ .